A person in a server room looking at a tablet. The room is filled with server racks and has a blue and white color scheme. The person is standing in the center of the aisle, looking at a tablet. The server racks are on both sides, and the floor is a light-colored metal grate. The lighting is bright and even.

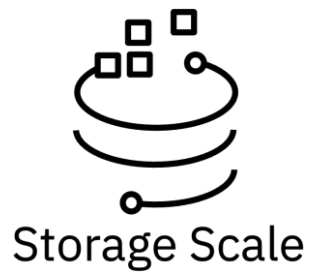
Introducing IBM Storage Defender and update on IBM Storage Protect

IBM Storage Scale Days 2024

March 5-7, 2024 | Stuttgart Marriott Hotel Sindelfingen

Dominic Müller-Wicke | STSM | IBM Storage Software Architect

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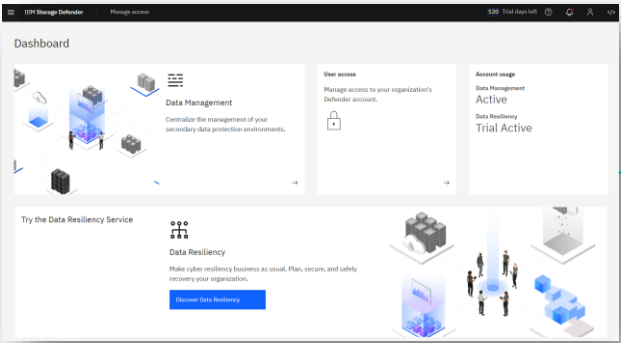
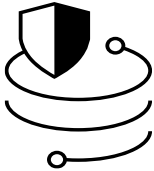
IBM Storage Scale Days 2024

Agenda:

Introducing IBM Storage Defender

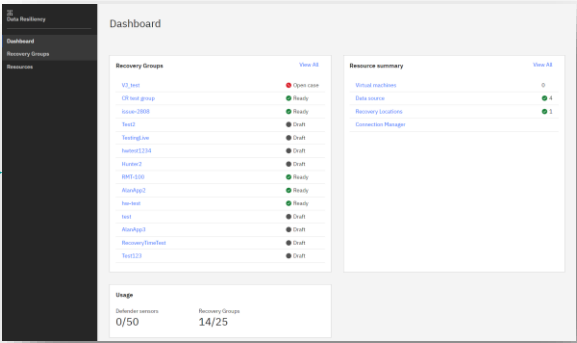
Update on IBM Storage Protect

IBM Storage Defender Architecture in a nutshell

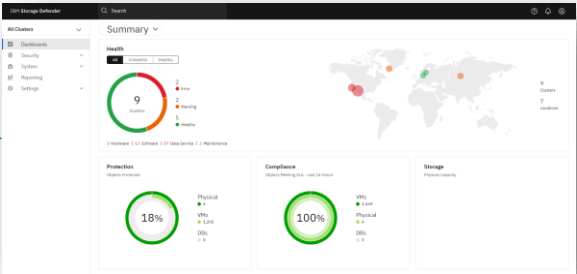





The **IBM Storage Defender** portal is the landing zone for the user for all current and future IBM Storage Defender services.

IBM Storage Defender Data Management Service is connected to one or multiple data protection solutions and provides a holistic view on the data protection status.

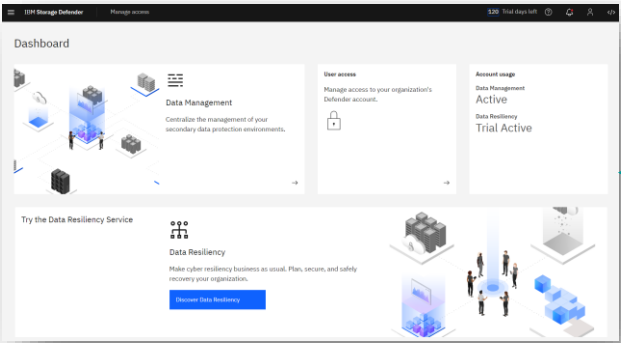
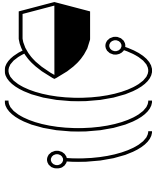


IBM Storage Defender Data Resiliency Service is your insurance that the data of your vital applications have the protection they need and can be recovered when required.

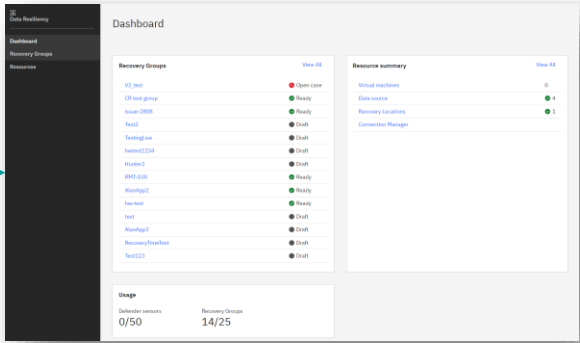


-  **IBM Storage Protect**
Server incl. archive to tape
-  **IBM Storage Defender Data Protect** cluster
-  **IBM Storage FlashSystem**
Volume Snapshots

IBM Storage Defender Architecture in a nutshell



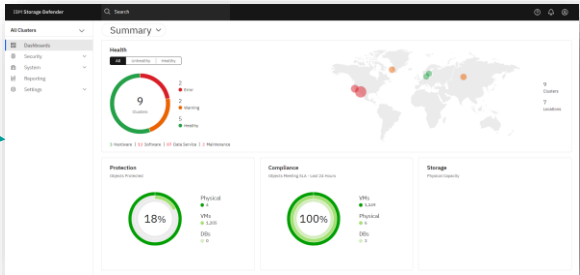
The **IBM Storage Defender** portal is the landing page for the user for all current and future IBM Storage Defender services.






IBM Storage Defender Data Resiliency Service is your insurance that the data of your vital applications have the protection they need and can be recovered when required.

Let's have a quick look at this...

IBM Storage Defender Data Management Service is connected to one or multiple data protection solutions and provides a holistic view on the data protection status.



-  **IBM Storage FlashSystem**
Volume Snapshots
-  **IBM Storage Protect**
Server incl. archive to tape
-  **IBM Storage Defender Data Protect** cluster

IBM Storage Defender Data Management Service

Multi-cluster management

Actively manage all your clusters, including multi-cluster monitoring and reporting, from a single dashboard.

Global actionable search

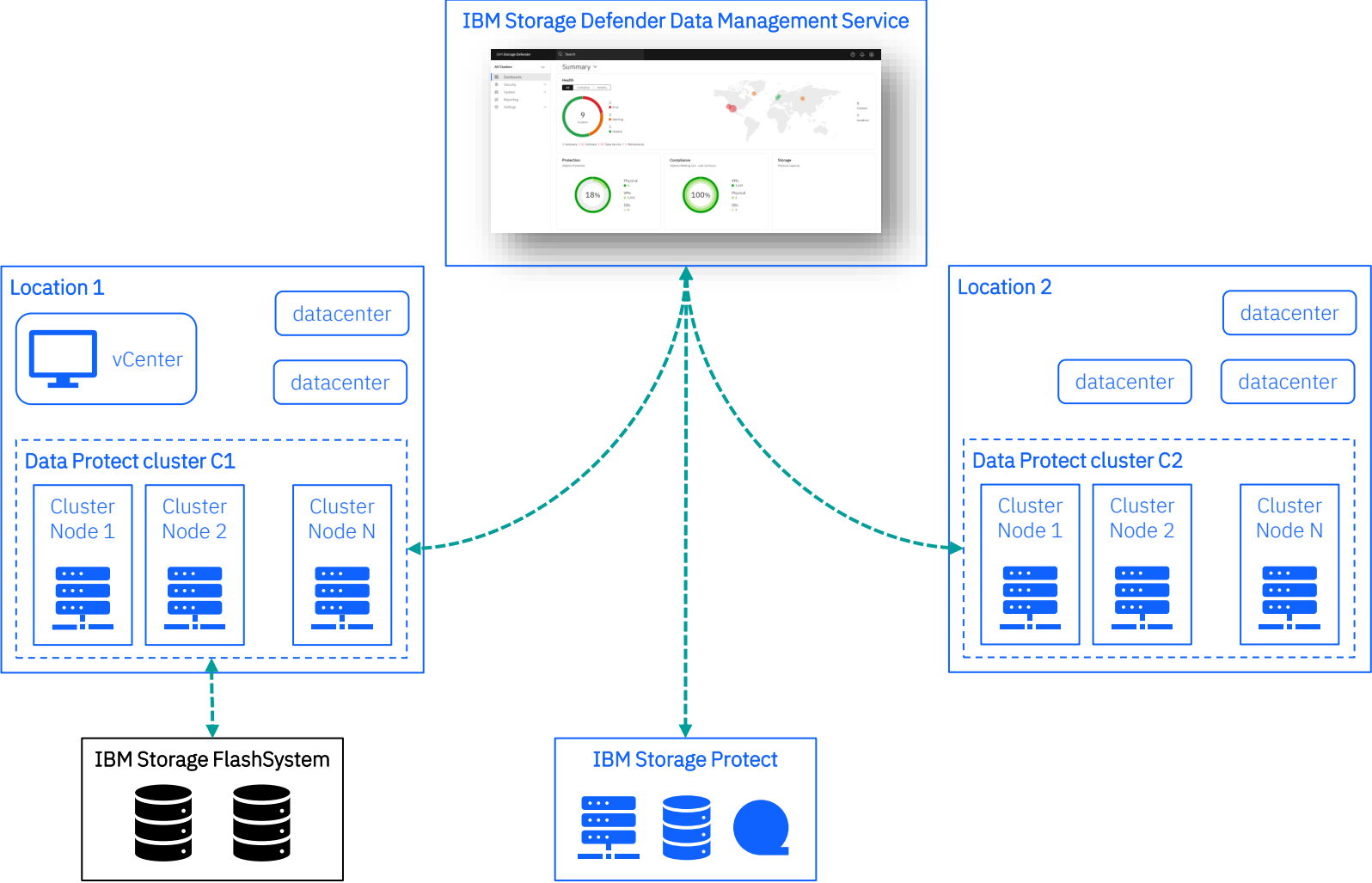
Search across clusters and act directly from the search results page. For example, search for all unprotected VMs and create jobs to protect them.

Smart Assist

Automatically schedule and orchestrate jobs and workloads to help meet SLAs. Get recommendations based on capacity forecasting and disk failure prediction. View important Data Management field notices.

Security tools

Detect threats and other anomalies across clusters with the unified Alerts page.



IBM Storage Defender Data Protect Architecture

Replication

In-Cluster replication

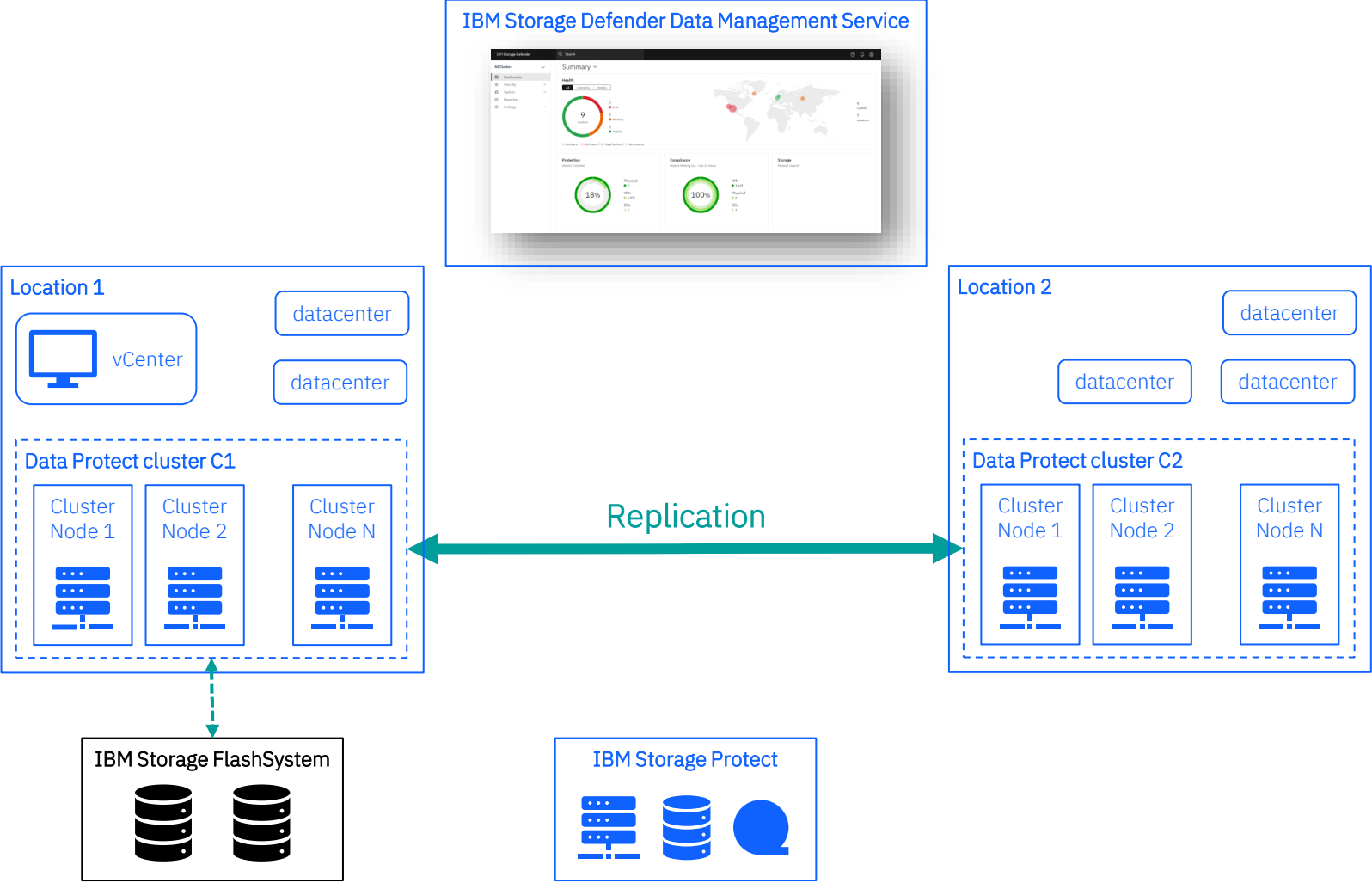
File blocks are distributed across the Cluster with a replication factor of two or more.

Cross-Cluster replication

Replication leverages snapshot compare methods to efficiently determine the changed entries and transmits the changes to the target cluster.

Replication to different Data Protect version is supported

Data in flight over HTTPS encrypted with AES-128-CBC



IBM Storage Defender Data Protect Architecture

Tiering and Archiving

Cloud Tier

Enables an additional storage tier used to migrate cold data from primary storage to cloud storage

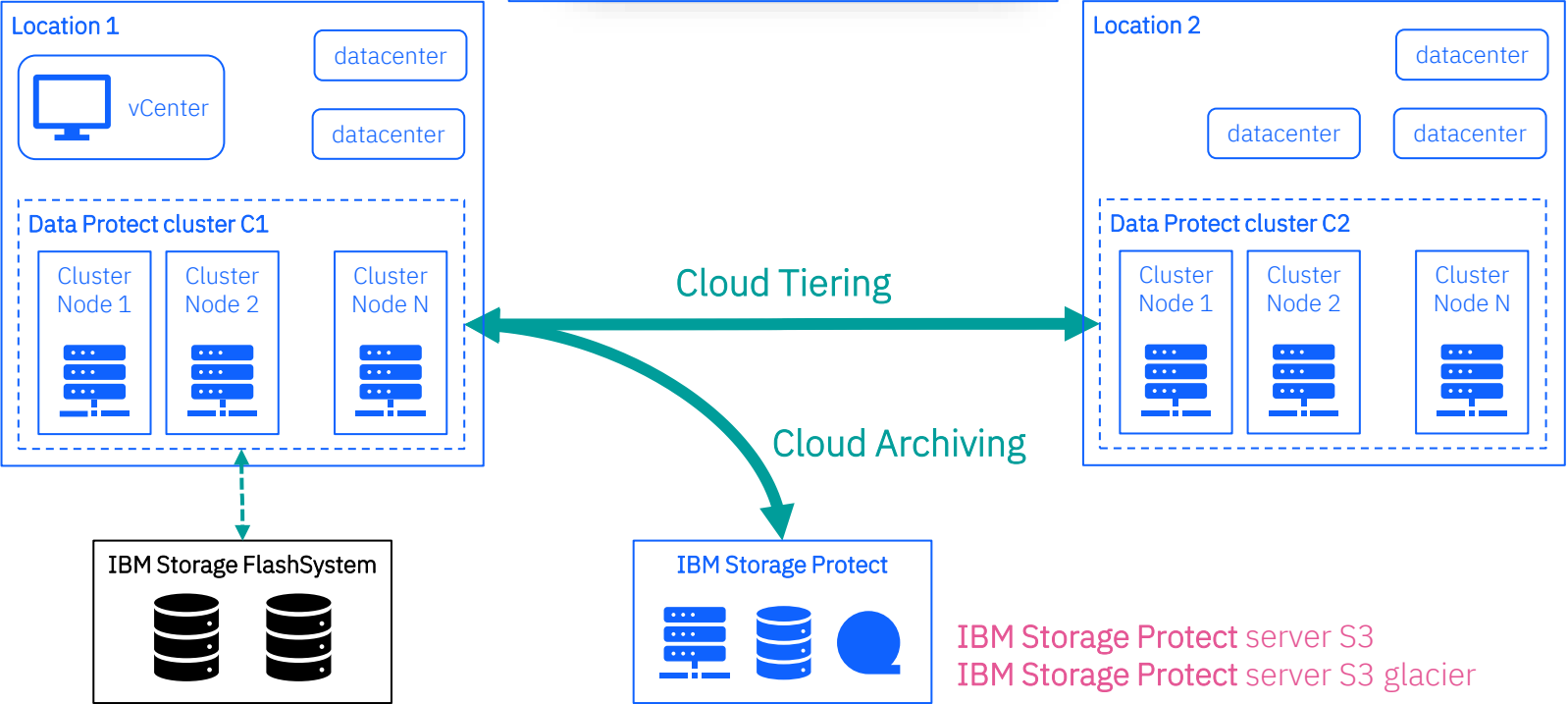
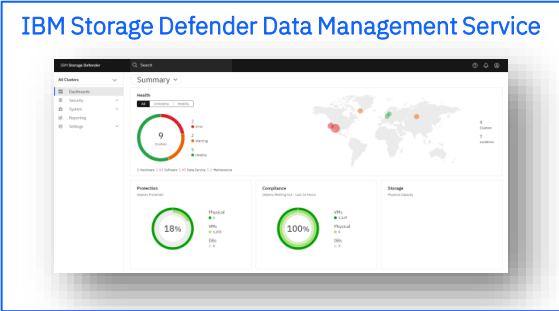
High deduplication rate reduces amount of data migrated to cloud.

Compression of data sent to cloud tier always enabled.

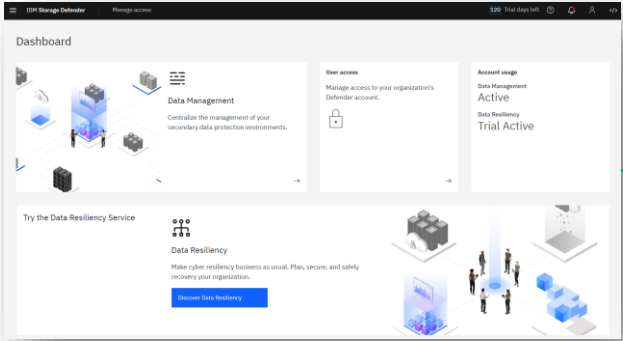
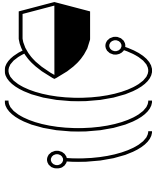
Cloud Archive

Archive data to cloud or other secondary storage.

- Supported Cloud archive targets:
- Public clouds
 - Private clouds - S3-compatible device
 - **IBM Storage Protect server S3**
 - Storage system providing NFSv3



IBM Storage Defender Architecture in a nutshell

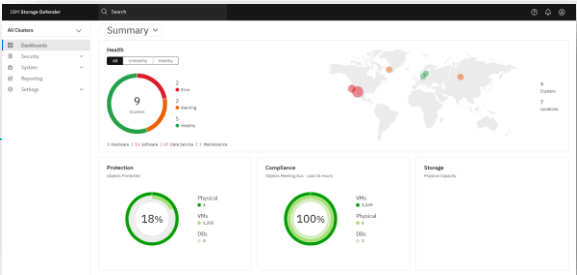


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Now explore this...

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- IBM Storage FlashSystem**
Volume Snapshots
- IBM Storage Protect**
Server incl. archive to tape
- IBM Storage Defender Data Protect** cluster

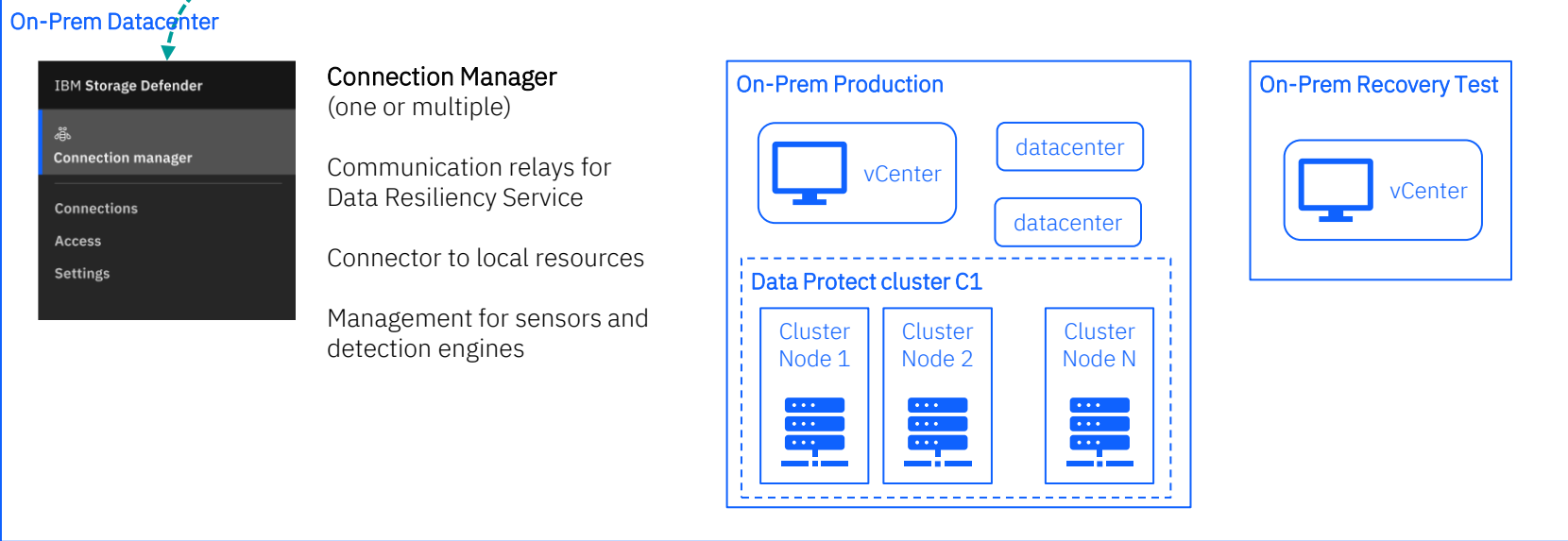
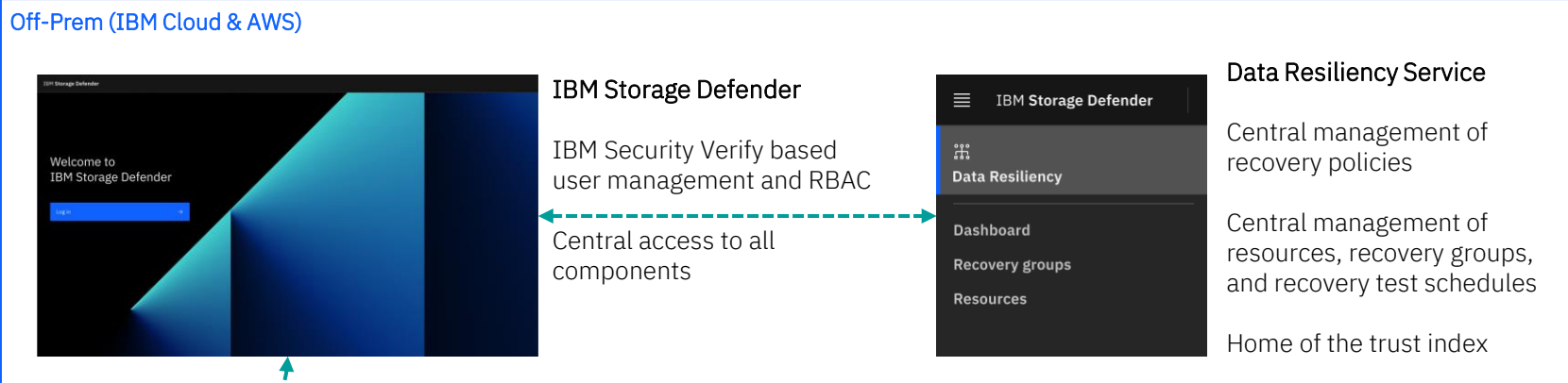
IBM Storage Defender Architecture in a nutshell

The Where-View

Secure by design

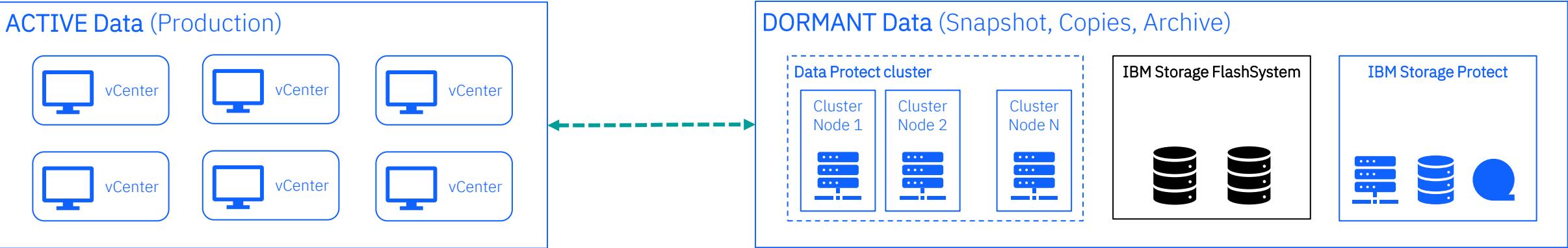
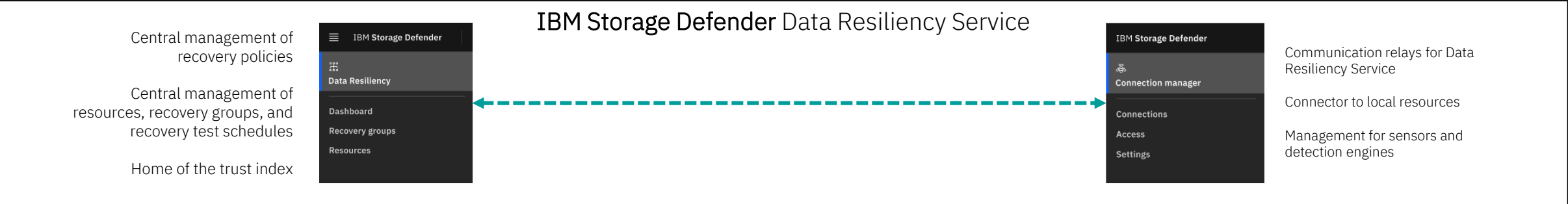
Scalable containerized implementation

Comprehensive interfaces

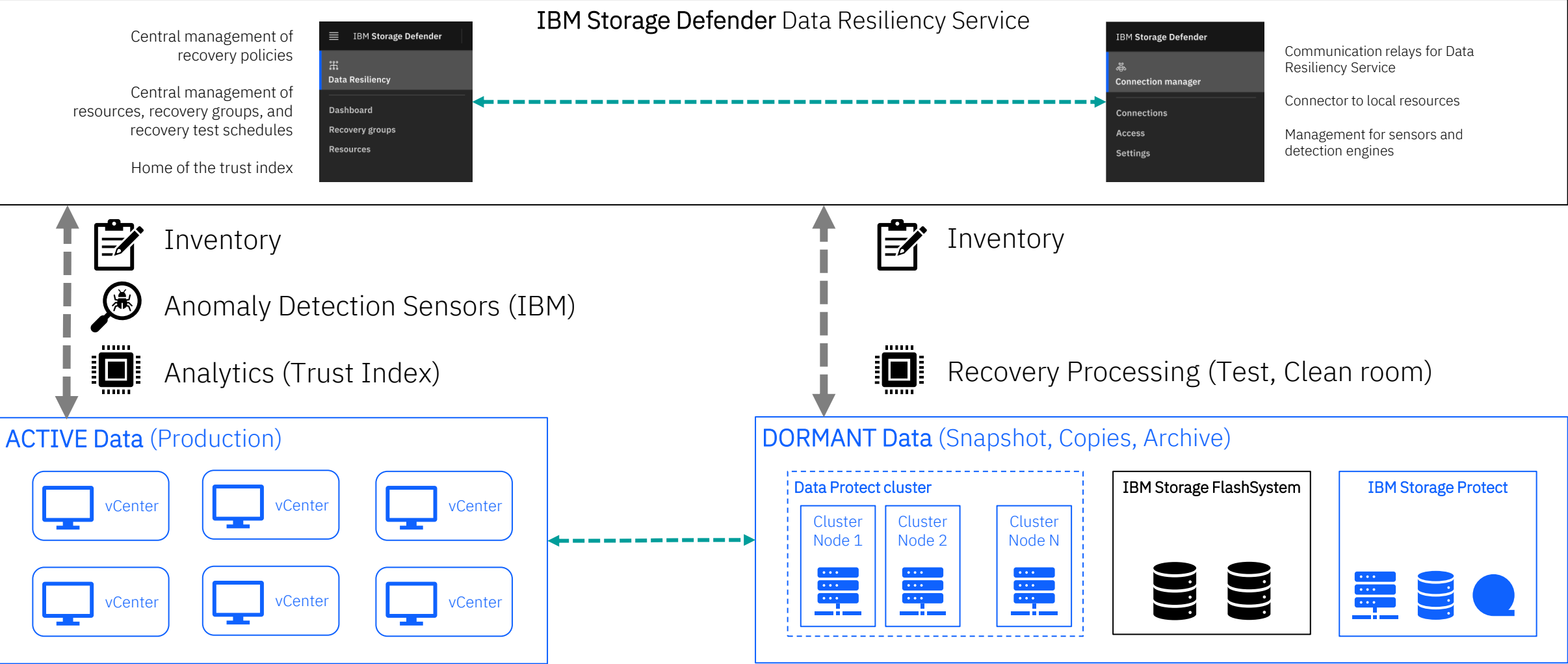


IBM Storage Defender Architecture in a nutshell

The What-View

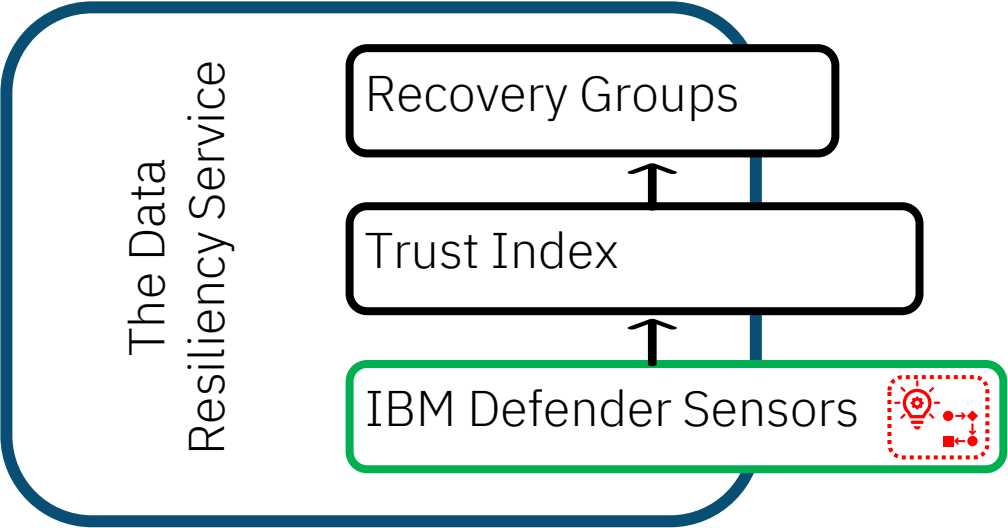


IBM Storage Defender Architecture in a nutshell



IBM Storage Defender - Sensors

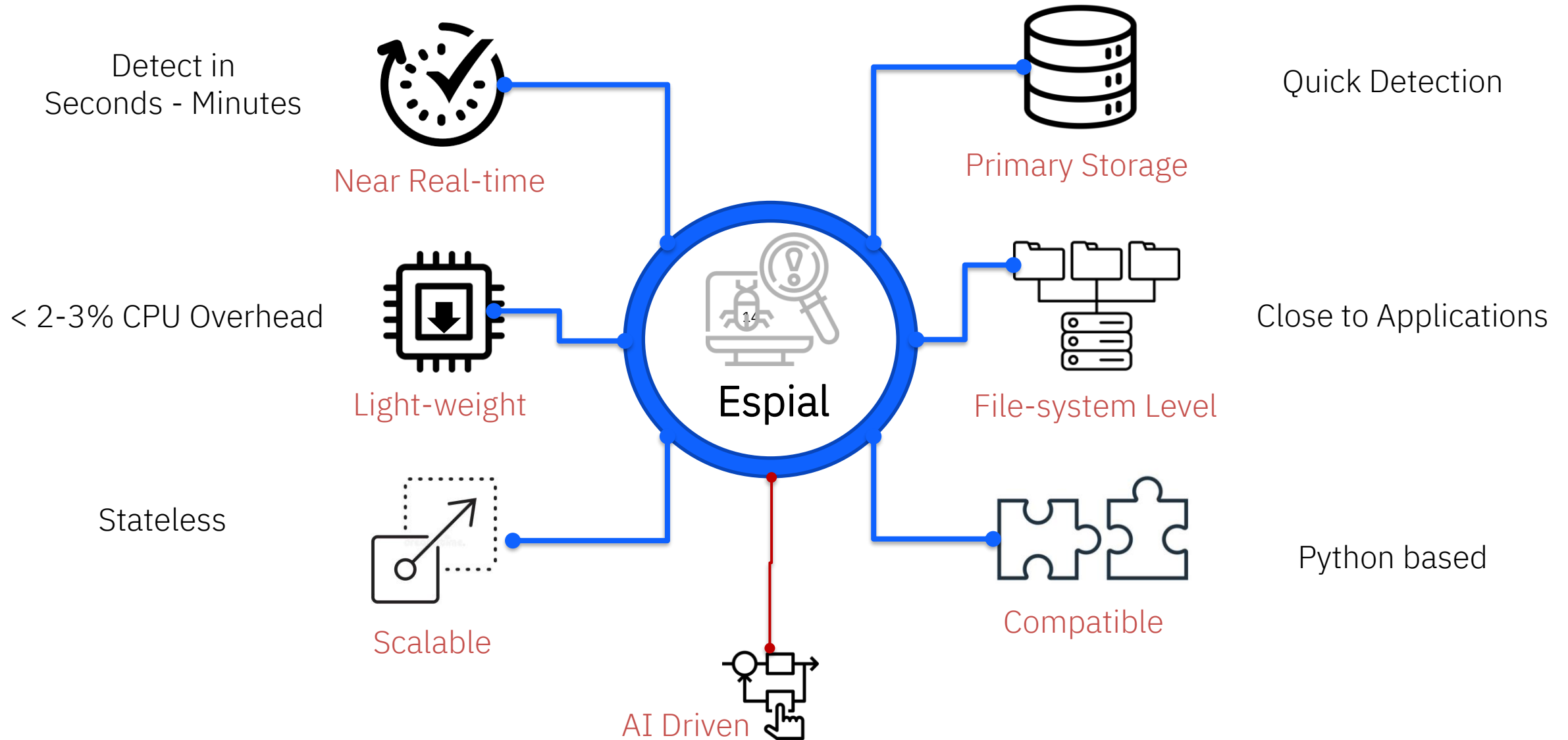
The Defender Sensors help us detect anomalies on live systems



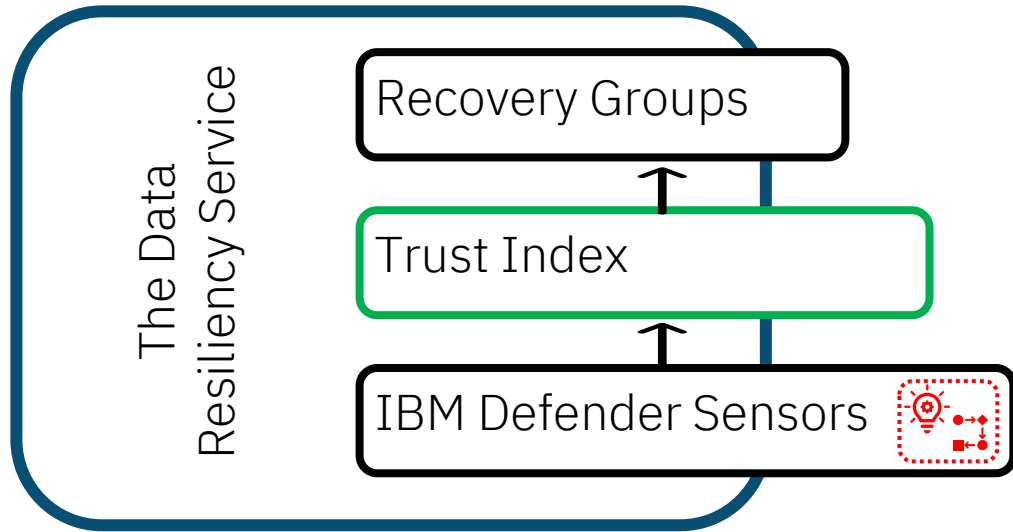
The screenshot shows the IBM Storage Defender web interface for a recovery group named 'recoverygroupName'. The status is 'Ready'. The protection level is 'Bronze'. The last successful test was on 11/06/2023 at 12:07 PM EDT. The test schedule is 'Tuesdays, 01:00 AM EDT'. There are 8 validated recovery points and 27 all recovery points. The resources section shows 5 virtual machines, data source 'vcenter.acme.net', and connect manager 'ConnManager1'. The trust index section shows a current score of 57 and a recent trend of 26%. The trust index graph shows a score increasing from approximately 25 on 10/28 to 57 on 11/06. The defender sensors section shows 5 VMs with sensors, last scan on 11/06/2023 at 12:07:15 PM EDT, and a scan frequency of every 30 seconds.

Category	Value
Status	Ready
Protection level	Bronze
Last successful test	11/06/2023 12:07 PM EDT
Test schedule	Tuesdays, 01:00 AM EDT
Validated recovery points	8
All recovery points	27
Virtual machines	5
Data source	vcenter.acme.net
Connect Manager	ConnManager1
Current score	57
Recent trend	26%
VMs with sensors	5/5
Last scan	11/06/2023 12:07:15 PM EDT
Scan frequency	Every 30 seconds

Ransomware Detection: Technical Differentiators



IBM Storage Defender - Trust Index

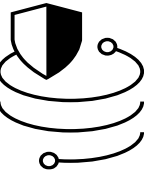


The **Trust Index** is an indicator for a Recovery Group that reflects the level of trust you can have in the data stored in your resources.

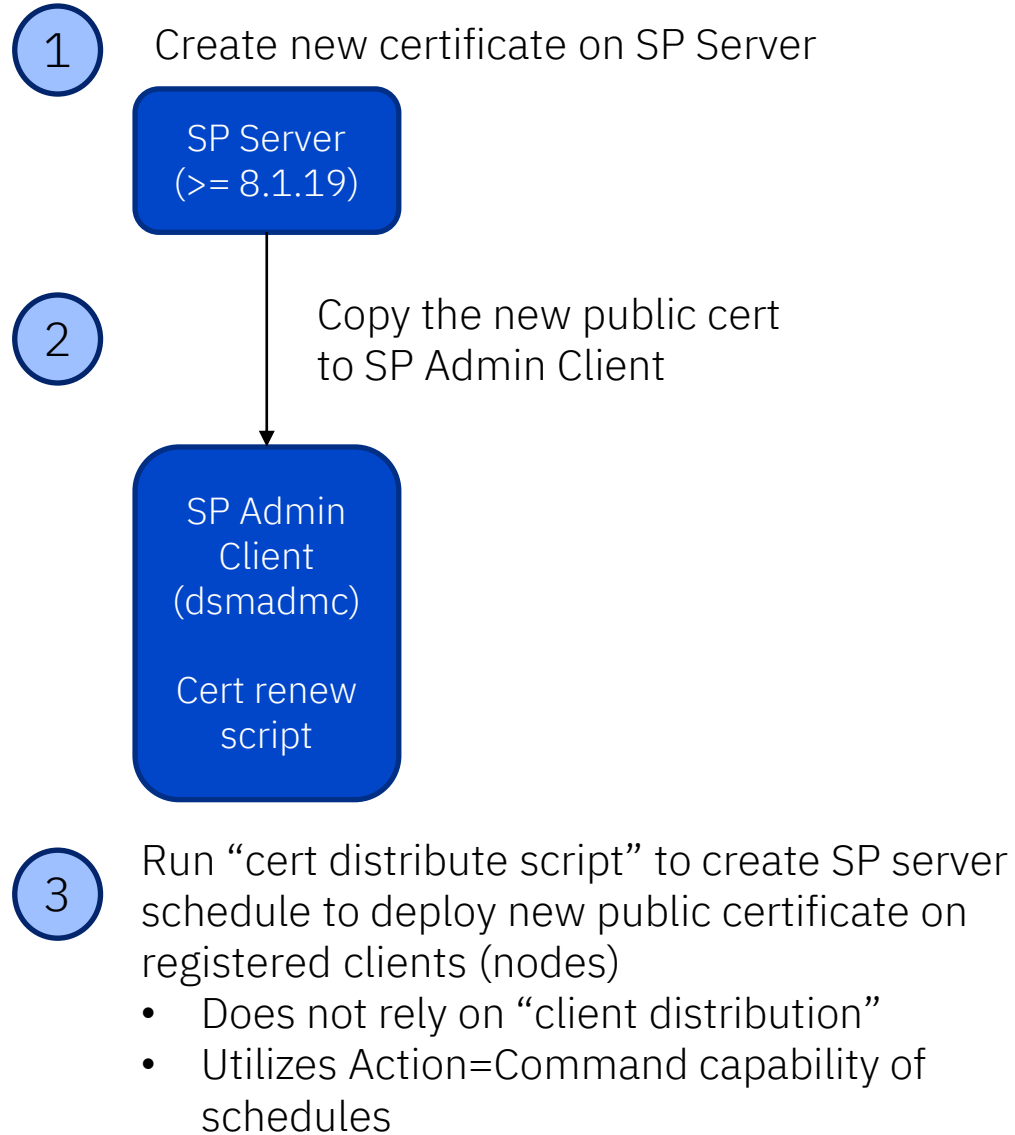
The trust score increases when ransomware sensors that are installed in the primary resources deliver clean test results.

The trust score increases as well if test recoveries do report clean test results.

IBM Storage Protect update



8.1.21 Scheduler-Based TLS Certificate Update



- 4
1. Scheduled operation runs for associated client nodes.
 2. Relies on TLS (security) of existing certificate prior to it being expired.
- 5
1. Certificate received on the respective client/agent from the scheduled operations.
 2. Local certificate store used by client updated to include the new certificate.



Requires use of SP Client Scheduler and client level >= 8.1.3

IBM Storage Protect – S3 Object Lock Validation

Storage Protect stores objects to S3 target ensuring that data cannot be modified or deleted for a fixed period.

Storage Protect's S3 object lock support requires validation for compatible object storage providers

Self-contained test package used for validation

- SP Server Docker container
- SP Client Docker container
- Automated Testcases
- Test Data and environment files

Storage Protect Integration with IBM Storage Defender Today

Improved IBM Storage Protect alert reporting

Full IBM Storage Protect version and capacity reporting

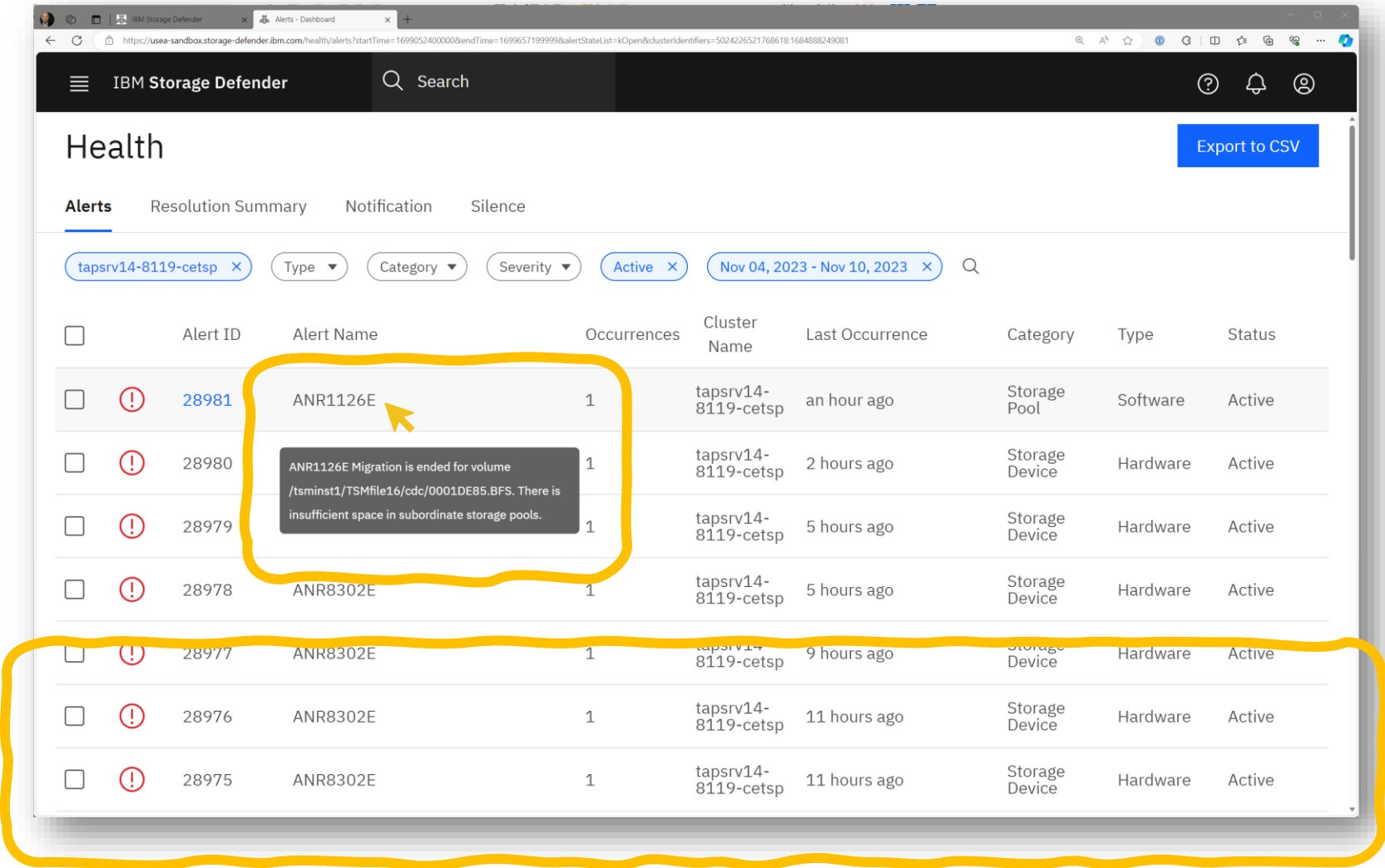
Data Protect -> Storage Protect Tape

Improved IBM Storage Protect alert reporting

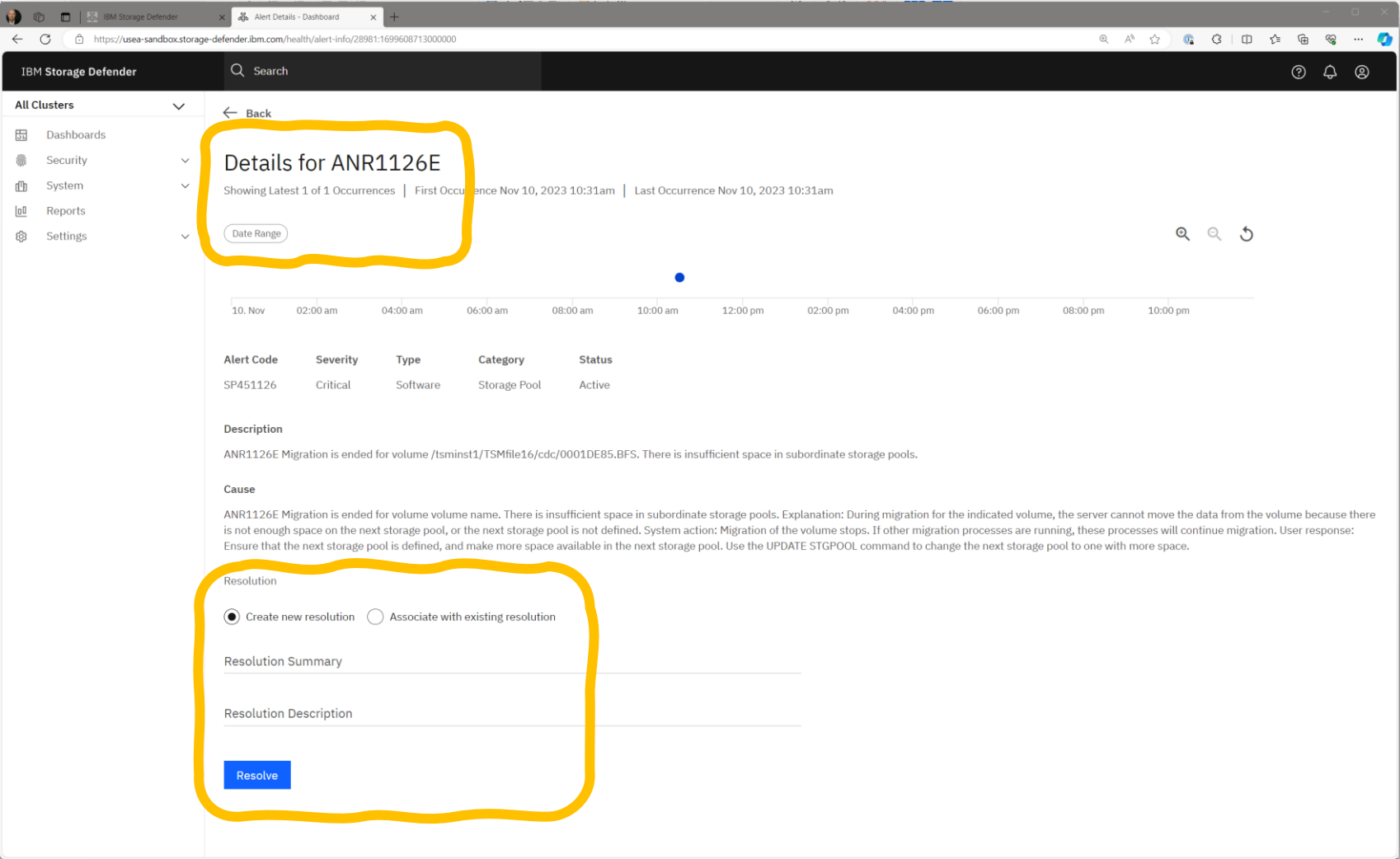
Under System -> Health

Review the alerts reported from all clusters or filter by cluster

Hoover over the alert message number to get full alert text



Improved IBM Storage Protect alert reporting

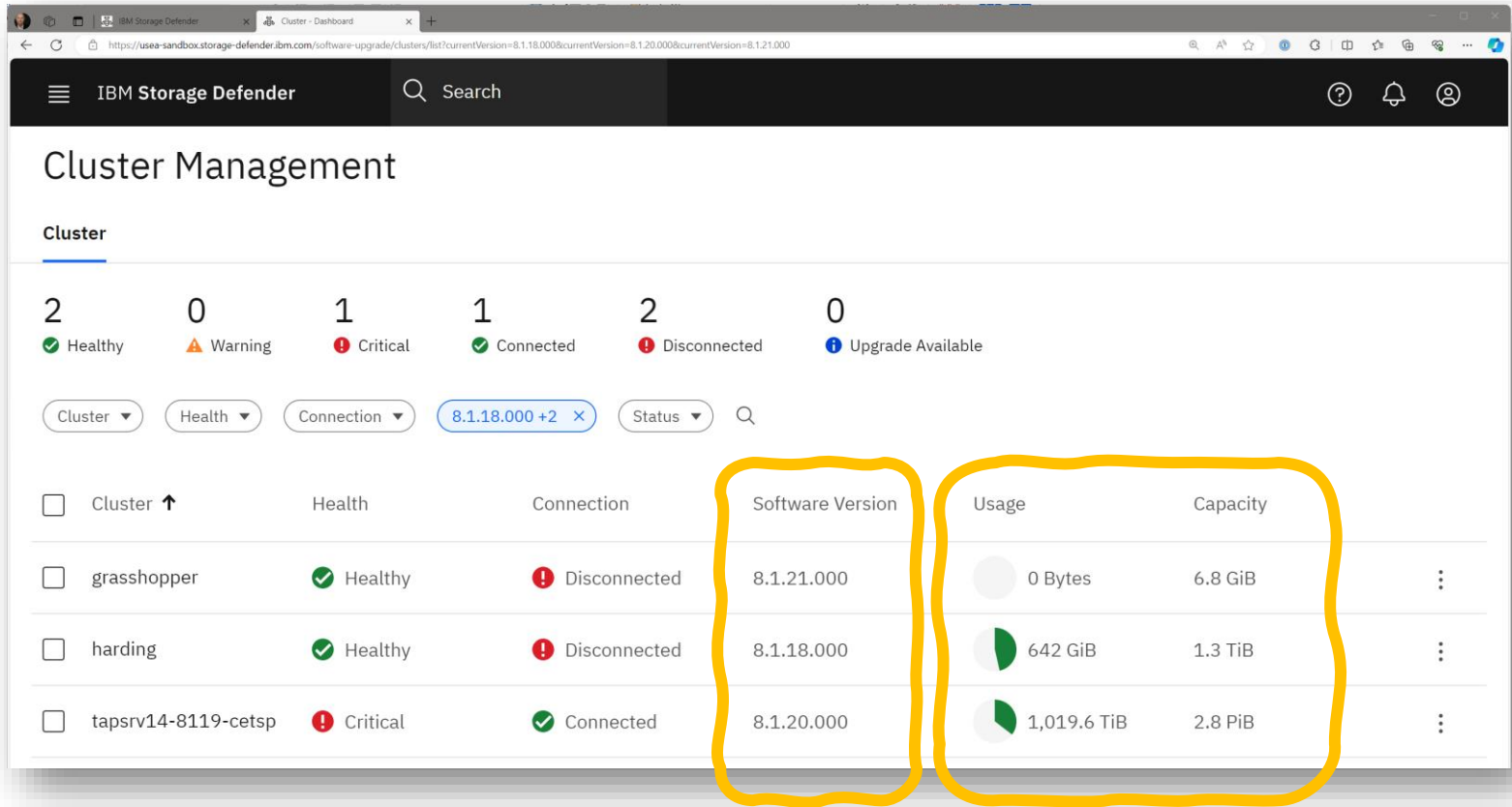


Click on specific alert message to go to details section

Review the alert and when it occurred

After resolving the alert create new resolution and resolve the alert

Full IBM Storage Protect version and capacity reporting



Under Settings -> Cluster

Software version reported to Data Management Service

Provisioned and used capacity reported

Thank you for using

